

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

In connection with the subject recently filed patent application, please enter the following amendment:

IN THE SPECIFICATION:

After the title, please delete the centered heading entitled Description and add a new centered heading to read as follows:

Field of the Invention

Page 1, please delete the first paragraph and substitute with the following:

The invention relates to a process and a device for inspecting transparent containers in beverage bottling operations.

Page 1, after the first paragraph, please add a new centered heading to read as follows:

Background of the Invention

Page 1, after the third full paragraph, please add a new centered heading to read as follows:

Summary of the Invention

Page 1, please delete the fifth paragraph in its entirety.

Page 3, after second full paragraph, please insert a centered heading as follows:

Brief Description of the Drawings

Page 3, after description of Figure 4, please insert a new centered heading as follows:

Detailed Description of the Invention

IN THE CLAIMS:

Please delete Patent Claims at top of page and insert We Claim

Please amend the claims to read as follows:

1 (Amended). A process for inspecting transparent containers (B), comprising the steps of illuminating every container (B), producing and evaluating by a single CCD camera at least two exposures of the same container, imaging the contour of the container with the one exposure for the evaluation of the contour, imaging the wall of the container with the other exposure for the evaluation of the wall, and changing over, between the two exposures, the exposure time of the CCD camera (K) from an exposure time for the container wall to an exposure time for the container contour.

2 (Amended). A process in accordance with claim 1, and the step of forming the two exposures in the same intensity of illumination.

3 (Amended). A process in accordance with claim 1, and carrying out and storing in memory the two exposures of a container (B) one immediately after the other, and carrying out the evaluation of the exposures in one of in parallel or in succession, one after the other.

4 (Amended). A device (V) for inspecting transparent containers (B), particularly beverage bottles, comprising in combination a container-conveying device (F), at least one source of illumination (L), a single CCD camera (K) which is connected with an evaluation device (A) for the exposures of the containers, the exposures of the container walls and the exposures of the container profile being produced by means of said CCD camera (K), and a control device (C2) for changing the sensitivity of exposure of said CCD camera (K) between a sensitivity of exposure for the container profile and a sensitivity of exposure for the container wall.

5 (Amended). A device in accordance with claim 4, wherein said control (C2) has at least one electronic control circuit, by means of which the exposure time of said CCD camera (K) can be changed in at least two trigger positions (T1, T2).

6 (Amended). A device in accordance with claim 4, wherein said source of illumination (L) comprises at least one LED radiant field (3) which can be activated in the individual containers.

7 (Amended). A device in accordance with claim 6, and a flash time adjusting device (C1) which is coordinated with said LED radiant field (3).

Please add the following new claims:

8. A process in accordance with claim 2, wherein the step of forming the two exposures to be in the same illumination intensity is performed by means of flashes.

9. A device in accordance with claim 7, wherein said flash time adjusting device (C1) is an electronic control circuit which adjusts the flash time for the change of the intensity of illumination by means of different trigger positions.

REMARKS

The claims have now been reviewed and amended to conform to U.S. practice, but

have not been narrowed. The specification has been given headings, and a substitute Abstract has been provided on a separate sheet. No new matter has been added.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

It is respectfully submitted the application as amended above is now in condition for substantive examination on the merits. If any claim or other fees are due by this Amendment, please charge our deposit account No. 13-2855.

Respectfully submitted,

Lothar Werzinger et al, Applicants

Date: August 27, 2001

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Abstract

A process for inspecting transparent containers (B), in which every container is illuminated and at least two exposures of the same container are produced by means of a single CCD camera (K) and evaluated, whereby one exposure images the container profile and the other exposure images the container wall, the exposure time of the CCD camera (K) is changed, between the two exposures, from an exposure time for a container to an exposure time for a container profile. A control device (C2) for changing the sensitivity of exposure of the CCD camera (K) is provided.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

After the title, please delete the centered heading entitled “Description” and add a new centered heading to read as follows:

--Field of the Invention--

Page 1, please delete the first paragraph and substitute with the following:

--The invention relates to a process and a device for inspecting transparent containers in beverage bottling operations.--

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Page 1, please delete the fifth paragraph in its entirety.

Page 3, after second full paragraph, please insert a centered heading as follows:

--Brief Description of the Drawings--

Page 3, after description of Figure 4, please insert a new centered heading as follows:

--Detailed Description of the Invention--

IN THE CLAIMS:

Please delete “Patent Claims” at top of page and insert --We Claim--

Please amend the claims to read as follows:

1 (Amended). A process for inspecting transparent containers (B), [in which]
comprising the steps of illuminating every container (B) [is illuminated and], producing and
evaluating by a single CCD camera at least two exposures of the same container [are

produced and evaluated by a single CCD camera], [whereby] imaging the contour of the container [is imaged] with the one exposure for the evaluation of the contour, imaging [and] the wall of the container [is imaged] with the other exposure for the evaluation of the wall, [characterized in that] and changing over, between the two exposures, the exposure time of the CCD camera (K) [is changed over] from an exposure time for the container wall to an exposure time for the container [profile] contour.

2 (Amended). A process in accordance with claim 1, [characterized in that,] and the step of forming the two exposures [are each formed] in the same intensity of illumination[, particularly by means of flashes].

3 (Amended). A process in accordance with claim 1, and [characterized in that, the two exposures of a container (B) are carried] carrying out and [stored] storing in memory the two exposures of a container (B) one immediately after the other, [while] and carrying out the evaluation of the exposures [is carried out] in one of in parallel or in succession, one after the other.

4 (Amended). A device (V) for inspecting transparent containers (B), particularly beverage bottles, comprising in combination [with] a container-conveying device (F), at least one source of illumination (L), [and] a single CCD camera (K) which is connected with an evaluation device (A) for the exposures of the containers, [whereby] the exposures of the container walls and the exposures of the container profile [can] be produced by means of [the] said CCD camera (K), [characterized in that,] and a control device (C2) for changing the sensitivity of exposure of [the] said CCD camera (K) between a sensitivity of exposure for the container profile and a sensitivity of exposure for the container wall [is provided].

5 (Amended). A device in accordance with claim 4, [characterized in that, the] wherein said control (C2) has at least one electronic control circuit, by means of which the exposure time of said [the] CCD camera (K) can be changed in at least two trigger positions (T1, T2).

6 (Amended). A device in accordance with claim 4, [characterized in that, the] wherein said source of illumination (L) comprises at least one LED radiant field (3) which can be activated in the individual [bottles] containers.

7 (Amended). A device in accordance with claim 6, [characterized in that,] and a flash time adjusting device (C1)[,] which [is preferably an electronic control circuit adjusting the flash time for the change of the intensity of illumination by means of different trigger positions,] is coordinated with [the] said LED radiant field (3).

Please add the following new claims:

8. A process in accordance with claim 2, wherein the step of forming the two exposures to be in the same illumination intensity is performed by means of flashes.

9. A device in accordance with claim 7, wherein said flash time adjusting device (C1) is an electronic control circuit which adjusts the flash time for the change of the intensity of illumination by means of different trigger positions.

Abstract

[In a A process for inspecting transparent containers (B), in which every container is illuminated and at least two exposures of the same container are produced by means of a single CCD camera (K) and evaluated, whereby one exposure images the container profile and the other exposure images the container wall, the exposure time of the CCD camera (K) is changed, between the two exposures, from an exposure time for a container to an exposure time for a container profile. A control device (C2) for changing the sensitivity of exposure of the CCD camera (K) is provided [in the device (Fig. 1)].